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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,649	07/05/2001	Masaaki Ando	9982-21US (1108US)	7728

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ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103-7013

EXAMINER

KIM, SUN U

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/899,649

Applicant(s)

ANDO ET AL.

Examiner

John Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29-31 is/are allowed.
- 6) ☒ Claim(s) 26-28 and 32-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 26-28 and 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,190,557 (hereinafter referred to as Hisada et al) in view of U.S. Patent No. 5,376,278 (hereinafter referred to as Salem) and U.S. Patent No. 4,906,372 (hereinafter referred to as Hopkins). Hisada et al teach system and method of running a spiral wound membrane module, comprising a pressure vessel (10) having a raw liquid inlet (13) and one or plurality of spiral envelope separation membranes (1) wound on the outer peripheral surface of a perforated hollow pipe (2) and allowing back wash reverse filtration under low back pressure since the separation membranes are low pressure reverse osmosis membranes which are run at 10 kgf/sq. cm or lower i.e. less than 0.98 MPa (see figures 1-4; col. 13, line 8 – col. 14, line 65) comprises the step of introducing washing liquid i.e. permeate into a permeate outlet (14) connected to the perforated pipe (2) for performing a back wash reverse filtration, axially feeding raw liquid through separation membrane (1) and taking out axially fed raw liquid through raw liquid outlet (15) (see figures 1-4; col. 13, line 66 - col. 14, line 61). Hisada et al further teach that separation membrane is formed by bonding the membranes (7) on both sides of a permeate spacer (6) (see col. 13, lines 23-31). Claims 26-28 and 32-37 essentially differ from the system and method of Hisada et al in reciting the step and gas injection means of injecting gas of not more than 0.3 MPa from at least one opening end of the perforated hollow pipe and permeable membrane body is bonded to the surface of the porous sheet material. Salem teaches system and method of running a spiral wound membrane elements with perforated central core (160) comprising backwashing membrane element by feeding water and air via air conduit (60) thorough a perforated center such that water and air passes radially outwardly through the membrane to dislodge particulates on the membrane (see figures 1-2; col. 7, lines 26-27, 54-57; col. 13, line 9

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- col. 14, line 35; col. 16, lines 7-45). Hopkins teaches a spiral wound type separation membrane which is formed by bonding separation membranes (14) on both surfaces of a sheet of permeate material such as Dacron fabric or of rigidized knitted Tricot for carrying out frequent cleaning as by back-flushing (see figure 3; col. 2, lines 1-29; col. 3, lines 20-68; col. 5, lines 40-59). It would have been obvious to a person of ordinary skill in the art to modify the system and method of Hisada et al to incorporate air injection system and method of Salem and the spiral wound type separation membrane of Hopkins for the spiral wound module of Hisada et al to improve removal of contaminants on membrane by frequent back-flushing which operates at low pressure.

2. Claims 29-31 are allowed.

3. Applicant's arguments with respect to claims 26-37 have been considered but are moot in view of the new ground(s) of rejection.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 3,966,616 and 5,128,037 and US 2002/0027111 and US 2002/0027103 teach spiral wound membrane modules.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is (571) 272-1142. The examiner can normally be reached on weekdays from 7:00 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (571) 272-1151. The fax phone number for official response is (703) 872-9306.

When sending a draft amendment by fax, please mark the paper as "DRAFT"; otherwise, mark the paper "OFFICIAL". This will expedite the processing of the paper.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.


John Kim
Primary Examiner
Art Unit 1723

J. Kim
February 12, 2004